

## **Recliner**

### **Field of Invention**

The present invention relates to a recliner.

### **Background of Invention**

US Patent No. 5186518 discloses a conventional recliner. This conventional recliner is however very complicated in structure. This complicated structure includes many parts and eventually entails a very high cost. Moreover, this complicated structure is bulky and heavy.

The present invention is therefore intended to obviate or at least alleviate the problems encountered in prior art.

### **Summary of Invention**

It is an objective of the present invention to provide a recliner with a backrest that can be moved to any desired position within a range.

It is an objective of the present invention to provide a recliner with a stool that can be moved to any desired position within a range.

It is another objective of the present invention to provide a recliner that is simple in structure.

According to the present invention, a recliner is disclosed here. The recliner is used as an office chair. The recliner includes a seat, a backrest pivotally attached to the seat, a stool pivotally attached to the

1 seat, a linkage connected between the backrest and the stool and a  
2 hydraulic cylinder connected between the seat and the backrest.

3  
4 Other objects, advantages and novel features of the invention will become  
5 more apparent from the following detailed description in conjunction  
6 with the attached drawings.

### 7 8 **Brief Description of Drawings**

9 The present invention will be described via detailed illustration of the  
10 preferred embodiment referring to the drawings.

11  
12 Figure 1 is a perspective view of a recliner according to the preferred  
13 embodiment of the present invention.

14  
15 Figure 2 is a side view of the recliner of Figure 1.

16  
17 Figure 3 is a top view of the recliner of Figure 1.

18  
19 Figure 4 is similar to Figure 3 but shows a hydraulic cylinder of the  
20 recliner in a different position.

21  
22 Figure 5 is similar to Figure 2 but shows the recliner in another position.

### 23 24 **Detailed Description of Preferred Embodiment**

25 Figure 1 shows a recliner 10 according to the preferred embodiment of  
26 the present invention. Not like conventional recliners that are often used

1 as sofas, the recliner 10 is used as an office chair. The recliner 10  
2 includes a base 22, a post 24 installed on the base 22, a seat 20 installed  
3 on the post 24 and two armrests 21 installed on the seat 20. The base 22  
4 includes at least three legs 26 and at least three casters 28 each attached to  
5 corresponding one of the legs 26. The post 24 is preferably a hydraulic  
6 cylinder so as to allow the position of the seat 20 to be adjusted.

7

8 A backrest 30 is arranged between and pivotally connected with the  
9 armrests 21. The backrest 30 includes an upper portion 31 for  
10 supporting a user's back and a lower portion 32 to be described.

11

12 A stool 40 includes two linkages 41 attached to the seat 20 and a stool  
13 plate 42 attached to the linkages 41. Referring to Figure 2, each  
14 linkages 41 includes a first link 43 pivotally connected with the seat 20, a  
15 second link 44 pivotally connected with the seat 20, a third link 45  
16 pivotally connected with the first link 43 and the second link 44, a fourth  
17 link 46 pivotally connected with the third link 45, a fifth link 47 pivotally  
18 connected with the fourth link 46 and a sixth link 48 pivotally connected  
19 with the third link 45 and the fifth link 47. The stool plate 42 is attached  
20 to the sixth links 48 of the linkages 41.

21

22 A linkage 50 is used to connect the lower portion 32 of the backrest 30  
23 with the linkages 41. Referring to Figure 3, the linkage 50 includes a  
24 first link 51 and a second link 52. The first link 51 includes an end  
25 pivotally connected with the lower portion 32 of the backrest 30 and an  
26 opposite end connected with a center of the second link 52. The second

1 link 52 of the linkage 50 includes two ends each connected with the  
2 second link 44 of corresponding one of the linkages 41.

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4 A hydraulic cylinder 60 includes an end attached to the seat 20 and an  
5 opposite end attached to the lower section 32 of the backrest 30. The  
6 hydraulic cylinder 60 includes a lever 61 for the control thereof. The  
7 lever 61 is normally in a first position shown in Figure 3. In the first  
8 position of the lever 61, the hydraulic cylinder 60 cannot be extended and  
9 shrunk. The lever 61 can be pivoted to a second position shown in  
10 Figure 4. In the second position of the lever 61, the hydraulic cylinder  
11 60 can be extended and shrunk.

12

13 Referring to Figure 2, the hydraulic cylinder 60 is extended. The lower  
14 portion 32 of the backrest 30 is in a rear position so that the backrest 30 is  
15 in a high position. The second links 44 of the linkages 41 are in a rear  
16 position so that the stool 40 is in a withdrawn position.

17

18 The lever 61 can be pivoted from the first position shown in Figure 3 to  
19 the second position shown in Figure 4. The hydraulic cylinder 60 can be  
20 shrunk so as to allow the movement of the backrest 30 and the stool 40  
21 from the position shown in Figure 2 to a position shown in Figure 5.

22

23 Referring to Figure 5, the hydraulic cylinder 60 is shrunk. Because of  
24 the hydraulic cylinder 60, the lower portion 32 of the backrest 30 is in a  
25 front position so that the backrest 30 is in a lower position. Because of  
26 the linkage 50, the second links 44 of the linkages 41 are moved to a front

1 position so that the stool 40 is in an extended position.

2

3 The backrest 30 and the stool 40 can be moved to any desired position  
4 between the positions shown in Figures 2 and 5 due to the use of the  
5 hydraulic cylinder 60.

6

7 The present invention has been described via detailed illustration of the  
8 preferred embodiment. Those skilled in the art can derive variations  
9 from the preferred embodiment without departing from the scope of the  
10 present invention. Therefore, the preferred embodiment shall not limit  
11 the scope of the present invention defined in the claims.

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